

CLAIMS

What is claimed is:

1 1. A hard disk drive, comprising:

2 a base plate;

3 a spindle motor coupled to said base plate;

4 a disk coupled to said spindle motor;

5 an actuator arm mounted to said base plate;

6 a voice coil motor coupled to said actuator arm;

7 a head coupled to said actuator arm;

8 a cover plate attached to said base plate to create an
9 internal cavity that contains said head;

10 a heater located within said internal cavity;

11 a temperature sensor that can sense a temperature of
12 said internal cavity; and,

13 a control circuit to control said heater to maintain a
14 temperature of internal cavity to be no less than a
15 threshold temperature.

1 2. The hard disk drive of claim 1, wherein said

2 control circuit includes an amplifier coupled to said

3 heater and a comparator coupled to said amplifier and said
4 temperature sensor.

1 3. The hard disk drive of claim 1, wherein said heater
2 is coupled to said base plate.

1 4. The hard disk drive of claim 2, wherein said
2 control circuit includes a switch coupled to said
3 comparator and said amplifier.

4 5. The hard disk drive of claim 1, wherein the
5 threshold temperature is approximately 10-15°C.

6 6. The hard disk drive of claim 1, further comprising
7 a register that stores the threshold value.

8 7. A hard disk drive, comprising:
9 a base plate;
10 a spindle motor coupled to said base plate;
a disk coupled to said spindle motor;
an actuator arm mounted to said base plate;
a voice coil motor coupled to said actuator arm;

11 a head coupled to said actuator arm and said disk;
12 a cover plate attached to said base plate to create an
13 internal cavity that contains said head;
14 heater means for heating said internal cavity;
15 temperature sensor means for sensing a temperature of
16 said internal cavity; and,
17 control circuit means for controlling said heater to
18 maintain a temperature of said internal cavity to be no
19 less than a threshold temperature.

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21 8. The hard disk drive of claim 7, wherein said
22 control circuit means includes an amplifier coupled to said
23 heater and a comparator coupled to said amplifier and said
24 temperature sensor means.

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26 9. The hard disk drive of claim 7, wherein said heater
27 means is coupled to said base plate.

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29 10. The hard disk drive of claim 8, wherein said
30 control circuit means includes a switch coupled to said
31 comparator and said amplifier.

1 11. The hard disk drive of claim 7, wherein the
2 threshold temperature is approximately 10-15°C.

3 12. The hard disk drive of claim 7, wherein said
4 control circuit means includes a register that stores the
5 threshold value.

6 13. A method for controlling a temperature of a hard
7 disk drive internal cavity, comprising:
8 sensing a temperature of a hard disk drive internal
9 cavity; and,
10 activating a heater if the sensed temperature is less
11 than a threshold value.

1 14. The method of claim 13, deactivating the heater if
2 the sensed temperature is at least the threshold value.

1 15. The method of claim 13, wherein the sensed
2 temperature is compared with a threshold value that is
3 stored in a register.

1 16. The method of claim 13, using exist temperature
2 sensing method in pre-amplifier or read/write chip.

16. The method of claim 13, using exist temperature
sensing method in pre-amplifier or read/write chip.